



बिरसा मुंडा ट्रायबल युनिवर्सिटी Birsa Munda Tribal University

राजपिपला, जि० नर्मदा Rajpipla, Dist. Narmda

Established by Tribal Development Department, Govt. of Gujarat

School of Computer Science

P.G.D.C.A. (Post Graduate Diploma in Computer Applications) Programme

Subject Code & Name: PGDCA106-1- Practical Based on PGDCA104-1 and PGDCA105-1

Teaching And Evaluation Scheme:

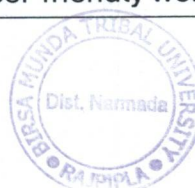
Teaching Scheme				Examination Scheme			
Credits				Component Weightage			
				CCE		SEE	
L	T	P	Total	TH	PWE	TH	PWE
-	-	4	4	-	50%	-	50%

Programme Name	PGDCA
Semester	1
Course Code	PGDCA106-1
Course Title	Practical Based on PGDCA104-1 and PGDCA105-1
Course Content Type (Th. / Pr.)	Pr,
Course Credit	4
Sessions + Lab Per Week	4
Total Teaching/ Lab Hours	120
* 2 Lab = 1 session	

Learning Objectives

Upon successful completion of this course, students will be able to:

- Understand the fundamental concepts of web technologies and client-side web development
- Design static and dynamic web pages with the use of HTML tags.
- Apply CSS to design attractive, responsive and user-friendly web pages



- Learn the fundamental of JavaScript to create interactive web pages and dynamic website features
- Remember and Understand the fundamental concepts of data communication, computer networks, Internet technologies, network topologies, transmission media, and networking devices.
- Explain the architecture and operation of networking models, including the OSI and TCP/IP reference models, and describe the functions of various networking protocols used in Internet communication.
- Apply IP addressing schemes, subnetting techniques, routing concepts, and networking principles to solve basic communication and connectivity problems.
- Analyse network communication processes, security threats, wireless networking technologies, and the role of network security mechanisms in protecting digital infrastructure.
- Evaluate Internet services, cloud computing models, emerging networking technologies, and their impact on modern computing environments and organizational operations.
- Develop the ability to identify, select, and utilize appropriate networking solutions, Internet services, and cloud-based technologies for real-world applications.

Learning Outcomes

After successful completion of the course, students will be able to:

- Explain the basic concepts of web programming, website, browsers and web services
- Create structured web pages using HTML elements, forms, tables, lists, links and multimedia tags
- Design visually appealing webpages using CSS properties, layouts, colors and responsive design techniques
- Apply concepts of JavaScript with form validation, DOM manipulation in webpage
- Describe the concepts of data communication, computer networks, Internet architecture, networking terminology, transmission media, and network devices.
- Differentiate various network types, topologies, communication modes, and compare the OSI and TCP/IP networking models along with their functional layers.
- Apply IPv4 and IPv6 addressing concepts, subnetting techniques, routing principles, and Internet protocols to establish and manage network communication.

- Analyse network security requirements, identify common cyber threats and attacks, and evaluate the effectiveness of security mechanisms such as firewalls, IDS, IPS, antivirus software, and VPNs.
- Utilize wireless networking technologies, Internet services, and cloud computing models for communication, collaboration, and information sharing in modern digital environments.
- Assess emerging technologies such as IoT, SDN, Network Virtualization, Edge Computing, and Smart City infrastructures, and propose suitable networking solutions for contemporary applications.

CLO–PLO Mapping Matrix:

CLOs/PLOs	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6
CLO1	3	1	2	1	2	1
CLO2	3	3	3	2	2	1
CLO3	3	3	3	2	3	1
CLO4	2	1	2	3	2	1
CLO5	2	2	3	3	3	1
CLO6	1	1	2	3	3	3
CLO7	1	2	2	3	3	3

Sample Practical exercises based on the subject PGDCA104-1- Introduction to Web Programming:

1. Develop an HTML page for personal introduction using headings, paragraphs, text formatting tags and basic HTML structure.
2. Create an HTML webpage for college information containing images, hyperlinks, lists and formatted content.
3. Develop an HTML page demonstrating ordered lists, unordered lists and definition lists for educational content presentation.
4. Create a multi-page HTML website with navigation links like Home, About, Courses and Contact pages.
5. Design and develop an HTML resume or curriculum vitae webpage using formatting elements and structured layout.
6. Create an HTML webpage for student timetable management using table elements with rowspan and colspan features.
7. Develop an HTML page for displaying a student result marksheet using nested tables and table formatting techniques.
8. Create an HTML-based online student registration form using various form controls and input types.
9. Develop an HTML feedback form containing labels, text areas, checkboxes, radio buttons and dropdown lists.

10. Create an HTML multimedia webpage integrating images, audio and video elements with media controls.
11. Develop an HTML product advertisement webpage containing multimedia content, descriptions and external links.
12. Create a semantic HTML5 webpage for blog or news layout using header, nav, section, article and footer tags.
13. Create webpages to demonstrate the implementation of inline, internal and external CSS styles.
14. Develop webpages demonstrating the use of element, class, ID, group and universal CSS selectors.
15. Design and develop a college website homepage using CSS text, font, color and background properties.
16. Create and style HTML tables using various CSS table formatting properties.
17. Develop webpages to demonstrate the CSS Box Model using margin, padding, border and border-radius properties.
18. Create horizontal and vertical navigation menus using HTML and CSS styling techniques.
19. Develop styled ordered and unordered lists using custom bullets and CSS list properties.
20. Create a responsive HTML webpage using viewport settings and relative CSS units such as %, em and rem.
21. Design and develop a responsive personal portfolio website containing profile, skills, projects and contact sections.
22. Create a modern business or startup landing page using HTML and CSS layout techniques.
23. Write JavaScript code to demonstrate variables, data types, operators and output methods such as alert() and console.log().
24. Write JavaScript code to create a basic calculator application using arithmetic operations and functions.
25. Write JavaScript code using conditional statements for grade calculation and eligibility checking.
26. Write JavaScript code demonstrating looping statements including for, while and do-while loops.
27. Write JavaScript code using user-defined functions, anonymous functions and arrow functions.
28. Write JavaScript code to perform array and string operations using methods such as push(), pop() and string functions.
29. Write JavaScript code to manipulate HTML elements dynamically using DOM methods.
30. Write JavaScript code to implement event handling using onclick, onchange, onmouseover and onsubmit events.

31. Write JavaScript code to develop a form validation system for validating required fields, email format and password rules.
32. Write JavaScript code to design an interactive image gallery or image slider using event handling and DOM concepts.
33. Write JavaScript code to create a dynamic To-Do List web application using HTML, CSS and JavaScript.

Sample Practical Exercises based on the subject PGDCA105-1-Networking and Internet:

1. Examine Twisted Pair, Coaxial Cable, Optical Fiber, and Wireless Media.
2. Use a Cross-over cable to connect two PCs. Assign static IP addresses for example 192.168.1.1 and 192.168.1.2 with subnet mask 255.255.255.0 and use the ping command in the Command Prompt to verify connectivity.
3. Identify and explain URL, DNS, ISP, WWW, Browser, and Web Server using real examples.
4. Observe web traffic and compare secure and non-secure communication.
5. Use nslookup command to resolve domain names.
6. Transfer files between systems using FTP services.
7. Study SMTP, POP3, and IMAP protocols using email services.
8. Configure and test remote connectivity using Telnet or SSH.
9. Configure Windows Firewall rules and test network access.
10. Configure a Wi-Fi network with SSID and security settings.
11. Enable WPA2/WPA3 security and test secure wireless connectivity.
12. Use Ping, Tracert/Traceroute, Netstat, and Ipconfig/Iconfig commands.
13. Create and manage files using Google Drive, OneDrive, or Dropbox.
14. Configure and host an online meeting using Zoom, Google Meet, or Microsoft Teams.

